

**Subject: CHLORDANE CONTAMINATED SOIL AT THE 212 FAMILY HOUSING REPLACEMENT PROJECT, MARINE CORPS BASE HAWAII (MCBH) KANEOHE**

**1. Background:**

- Naval Facilities Engineering Command, Hawaii (NAVFAC Hawaii) is administering a \$50 million contract for construction of 212 replacement junior enlisted homes for Marine Corps Base Hawaii (MCBH). Metcalf Construction Company Inc. was awarded the contract in October 2002.
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- Chlordane is a chemical that was legally used for years around housing foundations to prevent termites, until the EPA banned it in 1988. It is no longer used on government property. However, due to its common use years ago, it can be found in small amounts in the soil around older houses.
- There are no federal or state regulations for handling chlordane-impacted soil that was legally applied. This project is not part of a Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) or EPA CERCLA (otherwise known as Superfund) site. The Superfund/CERCLA program is responsible for cleanup guidance for chemical spills. It does not apply to the legal application of chemicals.
- If soil contains more chlordane than the screening level, DOH and EPA methodology allow for conducting a risk assessment to determine if any chlordane above the DOH screening level could safely remain on site.

**2. Discussion:**

- Soil tests taken in July 2005, detected chlordane levels in some samples above the State of Hawaii's Department of Health (DOH) and the Environmental Protection Agency's (EPA's) screening level guidance of 1.6 ppm (parts per million).
- The Navy Environmental Health Center (NEHC), who has significant experience in conducting risk assessments, performed a human health risk assessment in accordance with EPA guidelines and provided recommendations for the handling of this soil.
- Soil samples were purposefully collected in order to provide a conservative "upper bound" estimate of potential exposure to chlordane and were not inappropriately averaged over large areas.
- The risk assessment was based on an exposure duration of six years rather than 30 years as generally recommended by EPA on the basis that a maximum military tour length (and associated occupancy of military housing) would be six years. (EPA Region IX guidance, which is used by the State of Hawaii, is characterized as generic and expressly allows re-calculation using site-specific data.) However, the risk assessors have also evaluated the risk using EPA's 30-year residential exposure period and concluded that the site remains safe.
- NEHC suggested that most of the soil be used for area landscaping, with the exception of one area where the soil had much higher levels of chlordane. This soil was recommended for removal or coverage with a permanent barrier to prevent exposure.
- A plan to safely handle the soil was prepared based on NEHC's recommendations.
  - The management plan is to remove the higher-level impacted soil, place it under an area that will be covered with a hard surface basketball court and ensure administrative controls are implemented to track impacted soil and maintain the basketball court. This will act as a permanent barrier, which will keep people from being exposed to the soil. The rest of the soil has been approved for use in area landscaping.
- Five representatives from DOH visited project site in May 2006. DOH has reviewed sampling data and documentation, and has not found the Navy to be in noncompliance with regulatory requirements.
- At DOH request, Navy is leading efforts with other Department of Defense (DOD) services to develop a DOD policy for chlordane.

**3. Recommendation:**

- For information only.